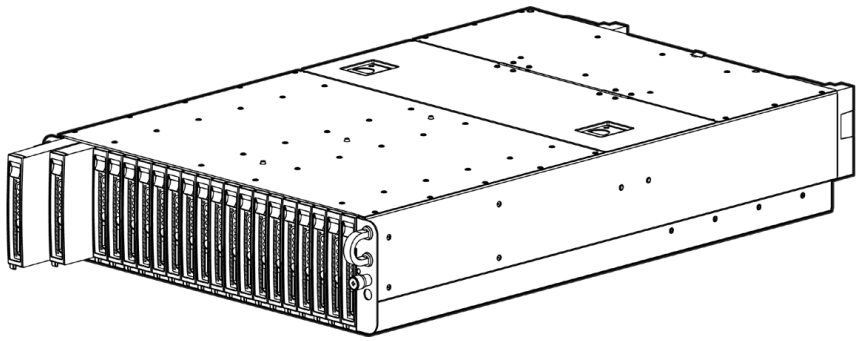
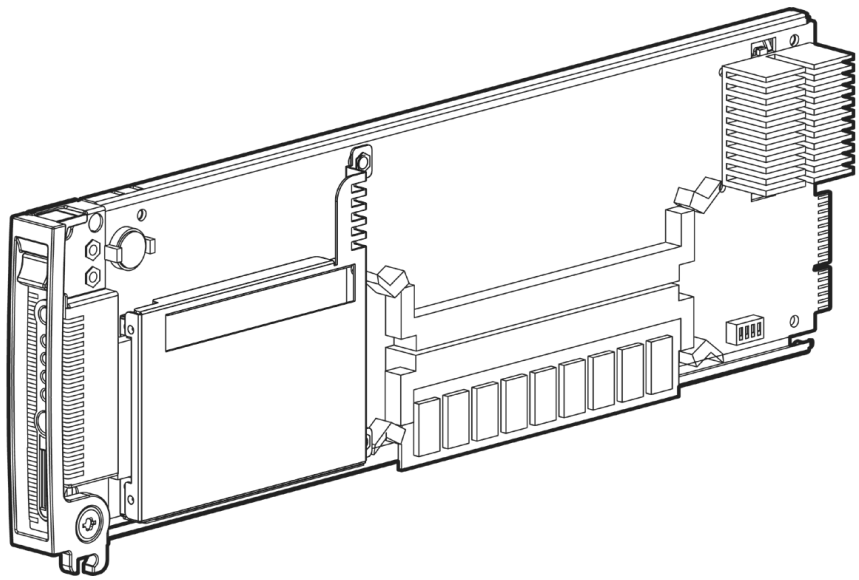
Overview



ProLiant BL e-Class Server Blade Enclosure
(shown with 20 ProLiant BL10e server blades)



ProLiant BL10e Generation 2 (G2) Server Blade

Overview

What's New

- One Ultra-Low Voltage Intel® Pentium® M 1GHz processor with 1-MB L2 cache
- Support for DDR memory

ProLiant BL10e G2 Server Blade includes:

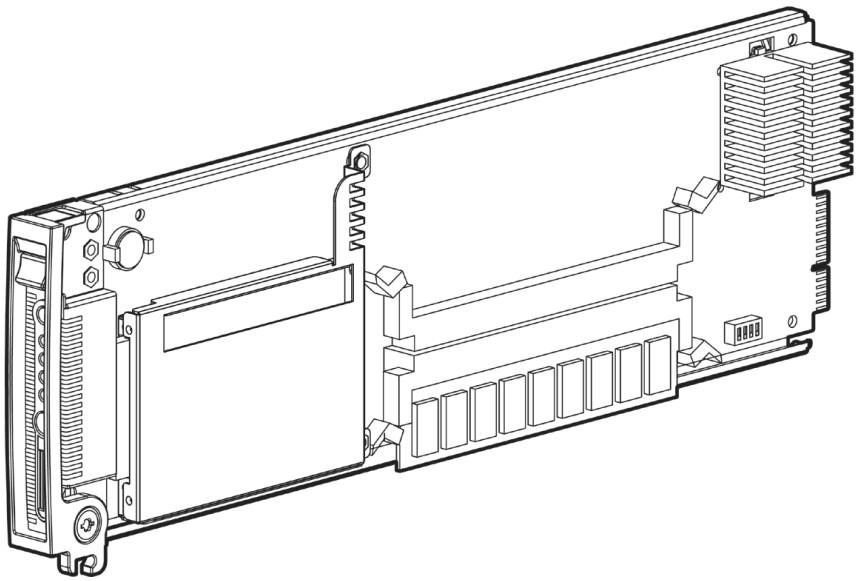
- One Ultra-Low Voltage ULV Intel Pentium M processor with 1-MB L2 cache (400-MHz front side bus)
- ServerWorks GC-SL chipset
- 512-MB C2100 Registered ECC DDR DIMM Memory standard expandable to 1024MB (2 DIMM slots)
- Two NC3163 Fast Ethernet NIC PCI 10/100 full WOL and PXE Integrated
- One 40-GB Ultra ATA/100 hard drive
- Server blades protected by HP Services, including a limited one year parts warranty with optional service uplifts available

ProLiant BL e-Class Server Blade Enclosure includes:

- 3U high rack-mountable chassis with 20 server blade bays
- Can be purchased with 20 licenses for new ProLiant Essentials Rapid Deployment Pack at 50% of standard license list price!
- Dual, 1+1 redundant hot-plug power supplies
- Four, 2+2 redundant hot-plug fans
- Three available interconnect options: C-GbE Interconnect Switch; RJ-45 Patch Panel; and RJ-21 Patch Panel
- Server blade enclosure protected by HP Services, including a limited three year warranty with optional service uplifts available

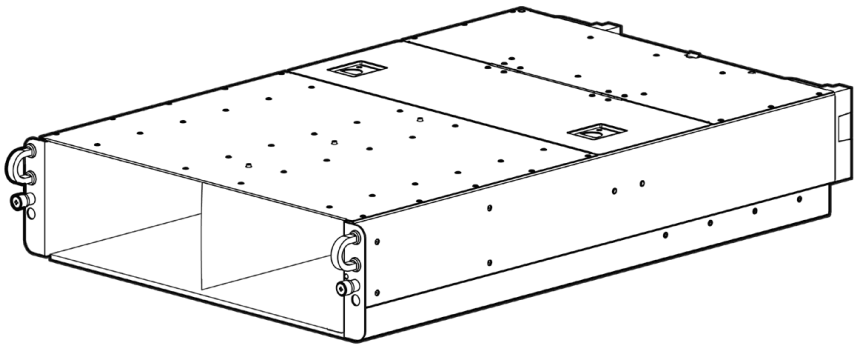
ProLiant BL e-Class Integrated Administrator features:

- Acts as a combination terminal server and remote power controller, enabling out-of-band, secure, serial console connections to all server blades and the optional interconnect switch
- Enclosure, interconnect switch and server blade health monitoring and alerts
- Command-line and browser-based management interfaces, including access permissions, for the server blades and the enclosure
- Provides access to the interconnect optional switch management interfaces
- SNMP, web and scriptable command-line interfaces

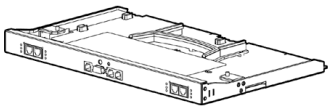


PLUS

Overview



PLUS



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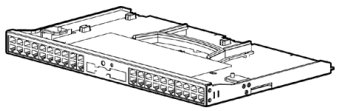

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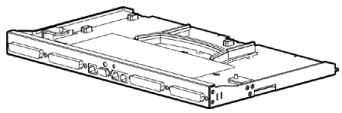

a. C-GbE Interconnect Switch

b. RJ-45 Patch Panel

c. RJ-21 Patch Panel

Configuration Steps

For a complete configuration of the HP ProLiant BL e-Class system, do the following:

1. Select ProLiant BL10e G2 server blades sold [in a single-pack or 10-pack]

   PLUS

2. Select Server Blade Enclosures (each can hold up to 20 ProLiant BL10e G2 server blades). The enclosure can be purchased bundled with 20 licenses for ProLiant Essentials Rapid Deployment Pack at 50% of the standard license price.
   (**NOTE:** Rapid Deployment Pack is optimized for configuring and deploying ProLiant BL10e G2 server blades and enable unique features such as blade "rip and replace" for effortless server redeployment.)

   PLUS

3. Select one of the three Interconnect Tray options for each server blade enclosure
   (**NOTE:** Each interconnect tray includes an Integrated Administrator module.):

   a. C-GbE Interconnect Switch (with 4 10/100/1000T Gigabit Ethernet
   RJ-45 uplinks for up to 40-to-1 network cable reduction!)

   OR

   b. RJ-45 Patch Panel (with 40 RJ-45 connectors)

   OR

   c. RJ-21 Patch Panel (with 4 RJ-21 connectors for cable aggregation behind the enclosure)
   (**NOTE:** If suitable for your environment, select also the RJ-21 to RJ-45 Cable Option kit.)

Standard Features

HP ProLiant BL10e G2 Server Blade

Processor	One Ultra-Low Voltage Intel Pentium M 1GHz processor	
Cache Memory	1MB Level-2 on-die Cache	
Chipset	ServerWorks GC-SL chipset	
	NOTE: For more information regarding ServerWorks, please see the following URL: http://www.serverworks.com/products/overview.html	
Memory	Standard	512MB PC2100 Registered ECC DDR DIMM Memory standard (1x512 MB)
	Maximum	1024 MB (2 DIMM slots total)
Network Controller	Two NC3163 Fast Ethernet NIC PCI 10/100 full WOL and PXE Integrated	
Internal Storage	Hard Drive	One 40-GB Ultra ATA/100 5,400 rpm Non-Hot Plug hard drive
Warranty	1 year on parts, 9x5 NBD. HP Care Pack warranty upgrades available to add labor, on-site service, faster response times, and longer terms to the standard server blade warranty.	
Form Factor	Server blades plug vertically into HP ProLiant BL e-Class Server Blade Enclosure	
Product Demo	To view the Product Demo, please see the following URL, then click on "PRODUCT DEMO": http://www5.compaq.com/products/servers/proliant-bl/e-class/index.html	

HP ProLiant BL10e G2 Server Blade

Dimensions	5.25 inch Height (3U), 17.5 inch Width, 28.35 inch Depth
	Bays for up to 20 ProLiant BL10e G2 server blades
Rack Capability	Mounts in HP, HP-branded, third-party, and Telco racks. Rack mounting hardware for HP, Compaq-branded and third-party racks ships standard with each server blade enclosure. Telco rack-mounting hardware is a separately available option kit.
Server Blade Enclosure includes	Rear bay for 1 of 3 Interconnect Tray configurations for network cable management (see below).
	Two (2) Diagnostic Adapters for connecting keyboard, video, mouse and other devices locally to individual server blades
	ProLiant Essentials Foundation Pack for ProLiant BL Servers, includes the Insight Managerä 7 and Management Agents CD and ProLiant Essentials Rapid Deployment Pack CD (trial version - 7-days, 10 nodes). (**NOTE:** The ProLiant BL e-Class server blade enclosure can also be purchased bundled with 20 licenses for Rapid Deployment Pack at 50% of the standard license price.)
	Four (2+2 redundant) hot- plug fans
	Dual (1+1 redundant) hot- plug power supplies (600 watts each), power cords
	Server blade blanks (to fill 19 of the 20 server blade bays)
	Rack mounting hardware for HP, Compaq-branded and third-party racks
	Null-modem cable for serial connection to the Integrated Administrator serial "Console" connector
	HP Documentation CD
Warranty	3 years on parts, labor and on-site service. HP Care Pack warranty upgrades available to add faster response times to the standard warranty.

HP ProLiant BL e-Class Interconnect Trays

NOTE: Each interconnect tray includes the Integrated Administrator module.

Please see the following (3) interconnect tray configurations for accessing server blade network connections:

ProLiant BL e-Class C-GbE Interconnect Switch (with 4 Gigabit Ethernet uplinks for up to 40-to-1 network cable reduction!)
NOTE: See details below.
RJ-45 Patch Panel (with 40 RJ-45 connectors)
RJ-21 Patch Panel (with 4 RJ-21 connectors for cable aggregation behind the enclosure)
NOTE: See "Other Options" below for RJ-21 to RJ-45 Cable option kit.

Warranty 3 years on parts, labor and on-site service. HP Care Pack warranty upgrades available to add faster response times to the standard warranty.

HP ProLiant BL e-Class Integrated Administrator ver. 1.40 Features

- Out-of-band local console and remote network access to the server blade enclosure and all 20 server blades via (one) RJ-45 10/100T Fast Ethernet and (one) RS-232 management connectors
- Provides local and remote access to the ProLiant BL e-Class C-GbE Interconnect Switch command console and browser-based management interfaces
- SNMP, Web (via HTTPS) and command-line interfaces (via Console connector, Telnet and Secure Shell)
- Remotely power on/off/reboot server blades and enclosures
- Remotely toggle on/off unit identification LEDs (UID) of server blades and enclosures
- Monitors and controls the enclosure fans, temperature sensors, power supplies, interconnect switch and server blade status
- Connect to each server blade's serial text console for enabling full control over server blade's
- Power-On Self Test (POST) and boot process, including the ROM-Based Setup Utility (RBSU).
  NOTE: For ProLiant BL10e G2 server blades running Windows® 2000 Server, there is now available a Serial Console for Windows utility that provides serial-based administrative functionality using the Integrated Administrator remote console feature. For more information and to download the Serial Console for Windows utility, go to the following page:
  http://www.compaq.com/support/files/server/us/locate/20_2611.html
- User administration for up to 25 users. Server blade bay privileges can be set on a per-user basis
- Virtual NMI button generates non-maskable interrupt for crash debug and analysis
- Support for Network Time Protocol (NTP)
- IP Security feature limits access to user-specified IP addresses
- AlertMail enables email alerts for system events
- More than 100 scriptable commands enable automated management
- Selective enabling of all protocols, such as Telnet
- Logging of operating system console, server blade and enclosure hardware events, user actions and invalid login attempts
- Emergency server blade enclosure shutdown caused by a critical temperature
- Enclosure Link (2) connectors reserved for future use.
  CAUTION: The enclosure link (RJ-45) connectors on the interconnect tray are not to be used. Connecting an external device to these enclosure link (RJ-45) connecters may damage your external device.
  For more information on the ProLiant BL e-Class Integrated Administrator, please visit the Web site at:
  http://www.compaq.com/products/servers/proliant-bl/e-class/integrated-admin.html

HP ProLiant BL e-Class C-GbE Interconnect Switch Features

- Provides up to a 40-to-1 reduction in network cables for each server blade enclosure using a pair of non-blocking layer 2 switch modules
- Four RJ-45 10/100/1000T Gigabit Ethernet uplinks
- Forty 10/100T Ethernet ports dedicated to server blade-to-interconnect switch network communications
- Communicate with all 40 server blade network controllers through any one uplink connector and the management connector
- Spanning tree protocol for loop-free path redundancy
- Browser, scriptable CLI, and console-based interfaces for local and remote interconnect switch management
- Manage entire interconnect switch through the Integrated Administrator connectors or any uplink connector
- Telnet, RMON and SNMP support; SNMP-based scripting utility with example scripts
- 256 Port-based IEEE 802.1Q tagged VLANs per switch processor module
- IGMP (internet group management protocol) snooping and quality of service (QoS) packet prioritization
- TFTP server support for rapid deployment of multiple interconnect switches and to provide backup and restore capabilities
- Industry-standard design compatible with industry-standard network components from leading network manufacturers
- Fully pre-configured for rapid deployment and immediate operation in ProLiant BL e-Class enclosure
- For more information on the ProLiant BL e-Class C-GbE Interconnect Switch, please visit the Web site at: http://www.compaq.com/products/servers/proliant-bl/e-class/interconnect-switch.html

Other Options

- RJ-21 to RJ-45 Cable option kit; contains four (4) 10 foot RJ-21 to RJ-45 cables (for use with the RJ-21 Patch Panel) interconnect tray

Diagnostic Adapter Interfaces

NOTE: Two Diagnostic Adapters are included with every ProLiant BL10e G2 Server Blade Enclosure.

ProLiant BL10e G2 server blade LEDs and buttons

PS/2 Mouse

PS/2 Keyboard

Video

Serial

USB (2)

NOTE: Please see the following URL for additional information regarding USB support: http://www.compaq.com/products/servers/platforms/usb-support.html.
NOTE: This Web site is available in English only.
NOTE: Server blades also support USB keyboard and USB mouse attached via the Diagnostic Adapter. The following USB devices have been tested for use with the ProLiant BL10e and the Diagnostic Adapter:

- USB Easy Access Keyboard (Carbon) (PN 267146-xx8)
- USB Easy Access Keyboard (Carbonite) (PN DC168B#)
- USB 2-Button Scroll Mouse (Carbon) (PN 195255-B25)
- USB 2-Button Scroll Mouse (Carbonite) (PN DC172B)
- USB Floppy (PN 304707-B21)

Standard Features

ProLiant Essentials Foundation Pack Software for the ProLiant BL Server	ProLiant Essentials Rapid Deployment Pack	Rapid Deployment Pack (RDP) is an automated deployment and provisioning solution for all ProLiant servers. RDP includes the Altiris Deployment Solution and ProLiant Integration Module featuring ProLiant server pre-configured events for OS installation, and optimized software drivers, firmware and management agents. Every RDP CD includes 10-node trial licenses for evaluation purposes. RDP requires a license for each server deployed and are available for purchase with blade servers. For more information, visit http://www.hp.com/servers/rdp.
	HP Systems Insight Manger	HP Systems Insight Manager (HP SIM) help maximize system uptime and performance and reduce system maintenance costs by providing proactive notification of problems before those problems result in unplanned downtime or reduced productivity. HP SIM is easy to set up to work with the Insight Management Agents, integrated Light-Out and Remote Insight Light-Out Edition, and Version Control Agents to deliver robust fault, configuration, and asset management as well as remote administration. With HP Systems Insight Manager customers will also be able to take advantage of role-based security; the ability to manage ProLiant, Integrity, and HP9000 systems; and plug-ins for storage, client, printer, and power management as well as server rapid deployment, performance management, and workload management. For more details on HP Systems Insight Manager visit http://www.hp.com/go/hpsim.
	Management Agents	The Management Agents form the foundation for HP's Intelligent Manageability strategy. They provide direct, browser-based access to in-depth instrumentation built into HP servers, workstations, desktops, and portables, and send alerts to HP Systems Insight Manager and other enterprise management applications in case of subsystem or environmental failures. For additional information about the Management Agents and other management products from HP, please visit the management Web site at http://www.hp.com/servers/manage.
	Subscriber's Choice	Subscriber's Choice Driver and Support Alerts/Notifications is a web-based email subscription service that provides software and driver change notifications for ProLiant products. Sign up at http://www.hp.com/go/subscriberschoice and customize your profile to receive various new alerts as they become available, on a weekly or monthly basis.
	ROMPaq, support software, and configuration utilities	The latest software, drivers, and firmware fully optimized and tested for your ProLiant server and options, available in the RDP CD, SmartStart or downloadable from Software and Drivers download pages, linked from the SmartStart website at http://www.hp.com/servers/smartstart.
	Survey Utility and diagnostics utilities	The most advanced configuration analysis, reporting and troubleshooting utilities used by HP and at your fingertips, available in SmartStart.

NOTE: For more information regarding ProLiant Essentials Software, please see the following URL: http://www.hp.com/servers/proliantessentials

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Optional ProLiant Essentials Value Packs

Optional software offerings that selectively extend the functionality of an Adaptive Infrastructure to address specific business problems and needs:

- Workload Management Pack - provides easier management of complex environments, improving overall server utilization and enabling Windows® 2000 customers for the first time to confidently deploy multiple applications on a single multiprocessor ProLiant Server.
- Performance Management Pack - a performance management solution that identifies and explains hardware performance bottlenecks on ProLiant servers and attached options enabling users to better utilize their valuable resources.

NOTE: Flexible and volume quantity license kits are available for ProLiant Essentials Value Packs. Refer to http://www.hp.com/servers/proliantessentials or the various ProLiant Essentials Value Pack product QuickSpecs for more information.

Standard Features

SmartStart

SmartStart is a tool that simplifies single server setup, providing a rapid way to deploy reliable and consistent server configurations. SmartStart 7.00 and later can now deploy the ProLiant BL20P G3 and ProLiant BL40P servers, using the I/O port with an attached USB CD-ROM device. To obtain a copy of SmartStart for your blade server, redeem the coupon that is included with your Blade server or order your copy from the SmartStart web site. For more information, please visit the SmartStart Web site at http://www.hp.com/servers/smartstart.
SmartStart version supported (minimum): SmartStart 6.20

Industry Standard Compliance

ACPI 1.0b compliant
SDG 3.0 compliant
Microsoft Logo certifications
MIB-II (RFC 1213), Bridge MIB (RFC 1493), Interface MIB (RFC 2233), 801.1Q MIB (RFC 2684), RMON1 MIB (RFC 1757) groups 1, 2, 3, and 9, and Ethernet MIB (RFC1643) (ProLiant BL e-Class C-GbE Interconnect Switch interconnect tray option)
IEEE 802.3, IEEE 802.3u, IEEE 802.3ab, IEEE 802.1D, IEEE 802.1p, IEEE 802.3ac and 802.1Q, IEEE 802.1Q, and IEEE 802.3x (ProLiant BL e-Class C-GbE Interconnect Switch interconnect tray option)
SNMP v1 (RFC 1157) and RMON v1 (RFC 1757) groups 1, 2, 3, and 9 (ProLiant BL e-Class C-GbE Interconnect Switch interconnect tray option)

Intelligent Manageability

Insight Manager 7
HP Systems Insight Manager
ROM Based Setup Utility (RBSU)
Automatic Server Recovery (ASR-2)
Enclosure Self Recovery (ESR)
Advanced Configuration and Power Interface Specification Ready (ACPI)
Server Blade and Enclosure Health Logs
Redundant Power Supply Utility
Power Down Utility
Pre-Failure Warranty (covers processors, hard drives and memory)
HP Interconnect Switch Management System and Utilities (included with the ProLiant BL e-Class C-GbE Interconnect Switch interconnect tray option)

Availability

Redundant Hot-Plug Power Supplies (ProLiant BL e-Class Server Blade Enclosure)
Redundant Hot-Plug Fans (ProLiant BL e-Class Server Blade Enclosure)
ECC Memory (ProLiant BL10e Server Blade)
Redundant ROM (ProLiant BL10e Server Blade)
Support for ProLiant network adapter teaming
Dual network communication paths to each server blade using redundant, non-blocking layer 2 switch modules
Redundant inter-module communication links
Two redundant uplink ports per each interconnect switch module
IEEE 801.1D Spanning tree protocol for loop-free path redundancy
Redundant configurable community strings and SNMP trap manager hosts
IEEE 802.3ad automatic multi-link load balancing and link failover (excluding LACP)

Security

Power-on password
Administrator's password
Secure Shell (SSH) access through the Integrated Administrator serial console
ProLiant BL e-Class C-GbE Interconnect Switch interconnect tray option security
Multilevel user names and passwords with configurable time out period setting
Ability to disable web-based and Telnet access to the switch user interfaces
256 IEEE 802.1Q tagged VLANs per interconnect switch module
Unicast and multicast static MAC address packet filtering table (layer 2 access control list)
Ability to specify the IP based management stations that are allowed to access each switch
Restriction on the maximum number of MAC addresses learned on a per port basis
Secure shell (SSH) access to the switch command line and menu driven interfaces via the Integrated Administrator

Standard Features

OS Support

NOTE: For a more complete and up-to-date listing of supported OSs and versions, please visit OS Support Matrix at: http://www.hp.com/go/supportos.
NOTE: For a more complete and up-to-date information on Linux support, please visit HP Linux Web site at http://h18000.www1.hp.com/products/servers/linux/hpLinuxcert.html.
NOTE: For a more complete and up-to-date information on Linux support, please visit HP Linux Web site at http://h18000.www1.hp.com/products/servers/linux/hpLinuxcert.html.

Rack Airflow Requirements

- Rack 10000 series Cabinets
  The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. The 10000 Series Racks provide enhanced airflow for maximum cooling, allowing these racks to be fully loaded with servers using the latest processors.

CAUTION: If a third-party rack is used, observe the following additional requirements to ensure adequate airflow and to prevent damage to the equipment

- Front and rear doors: If your 42U server rack includes closing front and rear doors, you must allow 5,350 sq cm (830 square inches) of hole evenly distributed from top to bottom to permit adequate airflow (equivalent to the required 64 percent open area for ventilation).
- Side: The clearance between the installed rack component and the side panels of the rack must be a minimum of 7 cm (2.75 inches)

CAUTION: Always use blanking panels to fill all remaining empty front panel U-spaces in the rack. This arrangement ensures proper airflow. Using a rack without blanking panels results in improper cooling that can lead to thermal damage.
NOTE: Please consult the Setup & Installation Guide for the server for additional details.

Service and Support

Three-year limited warranty, including hardware diagnostic support, pre-failure warranty (coverage of hard drives, memory and processors). The warranty is fully supported by HP Services and a worldwide network of resellers and service providers. In addition 90-day's getting started software telephone support may be covered under the warranty or available for an additional fee. Enhancements to warranty services are available through HP Care Pack services.

NOTE: Sever Blade Limited Warranty includes 3 year Parts, 3 year Labor, 3-year on-site support.
NOTE: Server Blade Enclosure and Interconnects Limited Warranty includes 3 year Parts, 3 year Labor, 3-year on-site support.

Care Pack services provide a range of life cycle support options that let you choose the service levels that meet your business requirements, from basic to mission-critical.

A full range of HP Care Pack hardware and software services are available including:

- Installation and start up
- Education courses
- Extended onsite hardware coverage hours from same business day 13 hours, 5 day to 24 hours, 7 days call window with options including 4-hour response or 6-hour Call To Repair
- Comprehensive range of software technical support for Microsoft, Linux, ProLiant Essentials and VMWare-based IT solutions helping to deliver high level of application availability. Response times range from 30 mins for critical problems to 2 hours.
- System Management, Performance Services and Mission Critical Support Solution

HP Care Pack services for ProLiant BL p-Class server blades, cover the server blade and the p-Class blade enclosure that the server blade is installed in as well as interconnects, power enclosure with power supplies and power distribution.

NOTE: For more information on HP Care Pack services, contact any of our worldwide sales offices or resellers or visit our worldwide Web site on the internet at: http://www.hp.com/hps/carepack
NOTE: For more complete information on HP Services offerings, customers and resellers, please visit us at: http://www.hp.com/hps
NOTE: Additional information regarding worldwide limited warranty and technical support is available at: http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html

Models

ProLiant BL10e G2 P1GHz-1MB (ULV), 512-MB, 40-GB ATA *333773-B21 (1 pack)* *333774-B21 (10 pack)*	**Processor**	One Ultra-Low Voltage Intel Pentium M 1GHz processor
	Cache Memory	1-MB Level-2 on-die cache
	Memory	512 MB (Standard) to 1024 MB (Maximum) PC2100 Registered ECC DDR DIMM Memory standard (1x512 MB)
	Network Controller	Two NC3163 Fast Ethernet NIC PCI 10/100 full WOL and PXE Integrated
	Hard Drive	One 40-GB Ultra ATA/100 5,400 rpm Non-Hot Plug 2.5" hard drive
	Form Factor	Plugs vertically into HP ProLiant BL10e G2 Server Blade Enclosure

Options

ProLiant BLe-Class Unique Options	Four (4) RJ-21 to RJ-45 cables for use with the RJ-21 Patch Panel interconnect tray (10 foot cables)	257076-B21
	Enclosure Shipping Bracket Kit **NOTE:** When shipping an enclosure in a rack shipping brackets must be installed to the rack.	293119-B21
Server Blade Enclosure	ProLiant BL e-Class Server Blade Enclosure	243280-B21
	ProLiant BL e-Class Server Blade Enclosure (includes 20 licenses for ProLiant Essentials Rapid Deployment Pack at 50% of the standard per-node license list price)	273644-B21
Interconnect Trays (each includes an Integrated Administrator module)	Interconnect Tray, ProLiant BL e-Class C-GbE Interconnect Switch	243283-B21
	Interconnect Tray, RJ-21 Patch Panel	253177-B21
	Interconnect Tray, RJ-45 Patch Panel	243282-B21
ProLiant Essentials Value Pack Software	ProLiant Essentials Rapid Deployment Pack (1 node license, V1.1) **NOTE:** Each server blade bay slot populated by a server blade requires one license.	267196-B21
	ProLiant Essentials Rapid Deployment Pack (10 node license, V1.1) **NOTE:** Rapid Deployment pack is now available in Linux only environments.	269817-B21
	Flexible Quantity License Kit	302127-B21
	License-Only - for use with a Master License Agreement	302128-B21
	ProLiant Essentials Workload Management Pack (Featuring Resource Partitioning Manager version 2.0)	303284-B21
	ProLiant Essentials Intelligent Networking Pack, Single Server License **NOTE:** For use with a single server. Contains one license with a unique license activation key and documentation.	372906-B21
	ProLiant Essentials Intelligent Networking Pack, Flexible License **NOTE:** For use with multiple servers. This part number can be used to purchase multiple licenses with a single activation key. The quantity ordered for this part number will be the quantity of licenses included in the kit in the form of a corresponding activation key. Use the same key to activate all licenses in the actual quantity ordered. For a given order, one kit will be delivered with the activation key, and documentation.	372950-B21
	ProLiant Essentials Intelligent Networking Pack, Tracking License **NOTE:** For use with signed and implemented Activation Key Agreements only. Purchase of this part number entitles the customer to deploy additional licenses of the product under the terms of the existing Activation Key Agreement. **NOTE:** Nothing is delivered in conjunction with the purchase of this part number. Visit http://h18004.www1.hp.com/products/servers/proliantessentials/license/akalic.html for more information on Activation Key Agreements. **NOTE:** For more information regarding ProLiant Essentials Software, please see the following URL: http://www.compaq.com/proliantessentials.	372951-B21
Memory (SDRAM DIMMs)	128MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 128 MB)	287494-B21
	256MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 256 MB)	287495-B21
	512MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 512 MB)	287496-B21
UPS and PDU Power Cord Matrix	Please see the UPS and PDU cable matrix that lists cable descriptions, requirements, and specifications for UPS and PDU units: ftp://ftp.compaq.com/pub/products/servers/ProLiantstorage/power-protection/powercordmatrix.pdf	

Options

Uninterruptible Power Systems- Rack	HP UPS R1500 XR (1440VA, 1340 Watt), Low Voltage (NA)	204404-001
	HP UPS R1500 XR (1500VA, 1340 Watt), High Voltage (Int'l)	204404-B31
	HP UPS R1500 XR (1500VA, 1340 Watt), Low Voltage (Japan)	204404-291
	HP UPS R3000 XR (2880VA, 2700 Watt), Low Voltage (NA)	192186-001
	HP UPS R3000 XR (3000VA, 2700 Watt), High Voltage (NA)	192186-002
	HP UPS R3000 XR (2400VA, 2250 Watt), Low Voltage (Japan)	192186-291
	HP UPS R3000 XR (3000VA, 2700 Watt), High Voltage (Japan)	192186-292
	HP UPS R3000 XR (3000VA, 2700 Watt), High Voltage (Int'l – detachable cord)	192186-B31
	HP UPS R3000 XR (3000VA, 2700 Watt), High Voltage (16A IEC309 Plug)	192186-B32
	HP UPS R3000 XR (3000VA, 2700 Watt), High Voltage (16A CEE 7/7 SCHUKO Plug)	192186-B33
	HP UPS R3000 XR (3000VA, 2700 Watt), High Voltage (16A BS-546 Plug)	192186-AR1
	Rack-Mountable UPS R6000 (6000VA, 6000 Watt) High Voltage (NA) **NOTE:** The UPS R6000 has a hardwired input.	347207-001
	Rack-Mountable UPS R6000 (6000VA, 6000 Watt) High Voltage (Int'l) **NOTE:** The UPS R6000 has a hardwired input.	347207-B31
	Rack-Mountable UPS R6000 (6000VA, 6000 Watt) High Voltage (Japan) **NOTE:** The UPS R6000 has a hardwired input.	347207-291
	UPS R12000 XR N+ x (200-240V) (WW-hardwired) **NOTE:** The UPS R12000 XR has a hardwired input and output.	207552-B22
UPS Options	SNMP Serial Port Card **NOTE:** Supports tower and rack UPS XR models ranging from 1000 – 3000VA.	192189-B21
	Six Port Card **NOTE:** Supports tower and rack UPS XR models ranging from 1000 – 3000VA.	192185-B21
	Extended Runtime Module, R1500 XR **NOTE:** 2U each, two ERM maximum.	218971-B21
	Extended Runtime Module, R3000 XR **NOTE:** 2U each, one ERM maximum.	192188-B21
	Extended Runtime Module, R6000 **NOTE:** 3U each, two ERM maximum.	347224-B21
	Extended Runtime Module, R12000 XR, 4U **NOTE:** 4U each, two ERM maximum.	217800-B21
	R12000 XR BackPlate Receptacle Kit, (2) L6-30R (NA) **NOTE:** The R12000 XR BackPlate Kit has a hardwired input.	325361-001
	R12000 XR BackPlate Receptacle Kit, (2) IEC-309R (WW) **NOTE:** The R12000 XR BackPlate Kit has a hardwired input.	325361-B21
	SNMP-EN Adapter **NOTE:** Supports R6000 UPS series only.	347225-B21

Options

Modular PDUs 1U/0U (Up to 32 outlets) **NOTE:** 1U/0U mounting brackets shipped with the unit (optimized for 10000 and 9000 series racks).	HP Modular Power Distribution Units (mPDU), Low Volt Model, 24A (100-127 VAC) (NA, Japan) **NOTE:** This mPDU (252663-D71) may also be used to connect the low volt model of the UPS R3000 XR.	252663-D71
	HP Modular Power Distribution Units (mPDU), High Volt Model, 24A (200-240 VAC) (NA, Japan)	252663-D72
	HP Modular Power Distribution Units (mPDU), High Volt Model, 32A (200-240 VAC) (Int'l)	252663-B31
	HP Modular Power Distribution Units (mPDU), High Volt Model, 40A (200-240 VAC) (WW) **NOTE:** This mPDU (252663-B21), 40A model has a hardwired input.	252663-B21
	HP Modular Power Distribution Units (mPDU), High Volt Model, 16A (200-240 VAC) (WW) **NOTE:** This PDU has a detachable input power cord and allows for adaptability to country specific power requirements (country-specific cord needs to be ordered separately; for North America, need IEC C19 to L6-20P power cord PN: 340653-001). This model may also be used with the high volt UPSs R3000 XR and R6000. **NOTE:** Please see the following Modular Power Distribution Unit (Zero-U/1U Modular PDUs) QuickSpecs for additional options including shorter jumper cables and country specific power cords: http://www5.compaq.com/products/quickspecs/11041_na/11041_na.HTML (North America) http://www5.compaq.com/products/quickspecs/11041_div/11041_div.HTML (Worldwide)	252663-B24

Options

USB Options

USB Easy Access Keyboard (carbon) 267146-xx8

USB Easy Access Keyboard (Carbon) Country Key Code

Dash #	Description	Dash #	Description
-008	US	-178	Arabic
-038	UK	-188	Belgium
-048	Germany	-218	Hungary
-058	France	-228	Czech
-068	Italy	-238	Slovac
-078	Spain	-248	Polish
-088	Denmark	-258	Russian
-098	Norway	-298	Japan
-108	Sweden/Finland	-338	Dutch
-128	French Canadian	-358	Finish
-138	Portugal	-B38	Int'l
-148	Turkey	-B48	BHCSY
-158	Greek		

USB Easy Access Keyboard (carbonite) DC168B#

USB Easy Access Keyboard (carbonite) Country Key Code

Dash #	Description	Dash #	Description
A2M	ICELAND	ABT	HE
AB0	TAWA	ABU	UK
AB1	KOR	ABV	ARA
AB2	PRC	ABX	FIN
AB6	FR A	ABY	DEN
AB7	GRK	ABZ	ITL
AB8	TURK	AC0	BEL
AB9	PORT	AC4	BRZ
ABA	US	ACB	RUSS
ABB	EURO	AKB	CZE
ABC	FCAN	AKC	HUNG
ABD	GR	AKD	POL
ABE	SP	AKL	THAI
ABF	FR	AKN	BHCSY
ABH	NL	AKR	SLOV
ABJ	Japan	ARK	ICELAND
ABM	LA	B15	KAZ
ABN	NOR	UUZ	SWISS
ABS	SW		

USB 2-Button Scroll Mouse (carbon) 195255-B25

USB 2-Button Scroll Mouse (carbonite) DC172B

USB Floppy 304707-B21

Options

Tape Libraries	**HP StorageWorks ESL9000 Series Tape Libraries**	
	ESL9595 Extended Tape Library, 0 drive, 400 slots (card cage, Interface Mgr card, Command View license)	343378-B21
	ESL9595 Library, 0 drive, 400 slots	330833-B21
	ESL9322 Extended Tape Library, 0 drive, 222 slots (card cage, Interface Mgr card, Command View license)	343377-B21
	ESL9595 Library, 0 drive, 222 slots	330832-B21
	ESL9000 Ultrium 460 drive kit	330834-B21
	ESL9000 Ultrium 230 drive kit	301930-B21
	ESL9000 SDLT 320 drive kit	293414-B21
	ESL9000 400 to 500 slot upgrade	330842-B21
	ESL9000 500 to 595 slot upgrade	330842-B22
	ESL9000 400 to 595 slot upgrade	330842-B23
	ESL9000 222 to 322 slot upgrade	330840-B21
	ESL9000 E2400-160 FC Interface Controller (one controller for every four drives)	330839-B21
	License for Direct Backup Engine ESL	343375-B21
	License for Secure Manager ESL	343376-B21
	NOTE: Please reference the ESL9000 Series Tape Libraries QuickSpecs at http://www.hp.com/go/automation for additional information needed to create a complete solution; reference current compatibility information at http://www.hp.com/go/ebs	
Custom Builder	Please see the Enterprise Configurator for configuration assistance at: http://www.hp.com/products/configurator.	

Options

HP Rack 10000 Series (Graphite Metallic)	S10614 (14U) Rack Cabinet - Shock Pallet	292302-B22
	HP Rack 10647 (47U) – Pallet	245160-B21
	HP Rack 10647 (47U) – Crated	245160-B23
	HP Rack 10642 (42U) – Pallet	245161-B21
	HP Rack 10642 (42U) – Shock Pallet	245161-B22
	HP Rack 10642 (42U) – Crated	245161-B23
	HP Rack 10636 (36U) – Pallet	245162-B21
	HP Rack 10636 (36U) – Shock Pallet	245162-B22
	HP Rack 10636 (36U) – Crated	245162-B23
	HP Rack 10622 (22U) – Pallet	245163-B21
	HP Rack 10622 (22U) – Shock Pallet	245163-B22
	HP Rack 10622 (22U) – Crated	245163-B23
	NOTE: -B21 (pallet) used to ship empty racks shipped on a truck -B22 (shock pallet) used to ship racks with equipment installed (by custom systems, VARs and Channels) -B23 (crated) used for air shipments of empty racks **NOTE:** Not all HP equipment is qualified to be shipped in the Rack 10000 series.	
	NOTE: Please see the Rack 10000 QuickSpecs for Technical Specifications such as height, width, depth, weight, and color: http://www5.compaq.com/products/quickspecs/10995_div/10995_div.HTML (Worldwide) http://www5.compaq.com/products/quickspecs/10995_na/10995_na.HTML (North America) **NOTE:** For additional information regarding Rack Cabinets, please see the following URL: http://h18000.www1.hp.com/products/servers/proliantstorage/rack-options/index.html.	

Rack Options for HP Rack 10000 Series	800mm Wide Stabilizer Kit (Graphite)	255488-B21
	NOTE: Supported by the Rack 10842 cabinet only.	
	600mm Stabilizer Kit – Graphite	246107-B21
	Baying Kit for Rack 10000 series (Carbon)	248929-B21
	42U Side Panel – Graphite Metallic	246099-B21
	110V Fan Kit (Graphite)	257413-B21
	NOTE: Roof Mount Includes power cord with IEC320-C13 to Nema 5-15P.	
	220V Fan Kit (Graphite)	257414-B21
	NOTE: Roof Mount Includes power cord with IEC320-C13 to Nema 6-15P.	
	36U Side Panel – Graphite Metallic	246102-B21
	47U Side Panel – Graphite Metallic	255486-B21
	9000/10000 Series Offset Baying Kit (42U)	248931-B21
	NOTE: This kit can be used to connect 9000 and 10000 series racks of the same U height together. Kit contents include hardware for connecting racks and a panel to cover the 100mm gap at the rear of the two racks.	
	NOTE: For additional information regarding Rack Options, please see the following URL: http://h18000.www1.hp.com/products/servers/proliantstorage/rack-options/index.html.	
	Ballast Option Kit	120672-B21
	9000/10000 Series Offset Baying Kit (42U)	248931-B21
	NOTE: This kit can be used to connect 9000 and 10000 series racks of the same U height together. Kit contents include hardware for connecting racks and a panel to cover the 100mm gap at the rear of the two racks.	
	NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://h18000.www1.hp.com/products/servers/proliantstorage/rack-options/index.html	
	Rack Rail Adapter Kit (25" depth)	120675-B21
	100 kg Sliding Shelf	234672-B21
	Monitor/Utility Shelf - Graphite	253449-B21

Options

Depth Adjustable Fixed Rail	332558-B21
Cable Management D-Rings Kit	168233-B21
Server Console Switch 1 x 4 port (100-230 VAC)	400336-001
Server Console Switch 1 x 4 port (100-230 VAC) (Int'l)	400336-B31
Server Console Switch 1 x 4 port (100-230 VAC) (Japan)	400336-291
IP Console Switch Box, 1 x 1 x 16	262585-B21
IP Console Switch Box, 3 x 1 x 16	262586-B21
CPU to Server Console Cable, 12'	110936-B21
CPU to Server Console Cable, 3'	110936-B24
CPU to Server Console Cable, 7'	110936-B25
IP CAT5 Cable 3', 4 pack	263474-B21
IP CAT5 Cable 6', 8 pack	263474-B22
IP CAT5 Cable 12', 8 pack	263474-B23
IP CAT5 Cable 20', 4 pack	263474-B24
IP CAT5 Cable 40', 1 pack	263474-B25
Switch Box Connector Kit (high voltage) (Int'l)	144007-B33
TFT5600 Rack Keyboard Monitor	221546-xx1
TFT7210R Rack Mounted 17" Monitor	348373-B21

NOTE: For a complete list of Monitors please view the following URL:
http://h18004.www1.hp.com/products/monitors/

1U Rack Keyboard & Drawer (Carbon)	257054-xx1

Country Code Key *(for 1U Rack Keyboard & Drawer (PN 257054-xx1))*

XX = 001	US	XX = 091	Norway
XX = 031	UK	XX = 101	Sweden/Finland
XX = 041	Germany	XX = 111	Switzerland
XX = 051	France	XX = 131	Portugal
XX = 061	Italy	XX = 181	Belgium
XX = 071	Spain	XX = 291	Japan
XX = 081	Denmark	XX = B31	International

NOTE: For additional information regarding Rack Options, please see the following URL:
http://h18000.www1.hp.com/products/servers/proliantstorage/rack-options/index.html.

Rack Options for HP, Compaq-branded, Third Party and Telco racks	Telco rack-mounting hardware kit for ProLiant BL e-Class Server Blade Enclosure	266076-B21
	Enclosure Shipping Bracket Kit **NOTE:** When shipping an enclosure in a rack shipping brackets must be installed to the rack.	293119-B21

Options

Service and Support Offerings (HP Care Pack Services)

NOTE: The HP Care Pack services for ProLiant BL e-Class server blades cover the server blade and the e-Class blade enclosure that the server blade is installed in as well as the interconnect tray.

Hardware Services On-site Service

Next Business Day On-site Service, 5-Day x 9-Hour Coverage, 3 Years	UA220A
Next Business Day On-site Service, 5-Day x 9-Hour Coverage, 3 Years , Electronic	UA220E
4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years	UA221A
4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic	UA221E
4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years	UA222A
4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	UA222E

Installation & Start-up Services

ProLiant BL e-Class Blade Server Hardware Installation	UA227A
ProLiant BL e-Class Blade Server Hardware Installation, Electronic	UA227E
ProLiant BL e-Class Enclosure and Server Blade Hardware Installation	U4960A
ProLiant BL e-Class Enclosure and Server Blade Hardware Installation, Electronic	U4960E
Provides for the Installation and Start-up of Compaq's Rapid Deployment Pack on a Customer supplied server designated as a Deployment Server. Includes the deployment of a single server. This new server will be deployed using either one of the pre-configured scripts or an image. In addition, the service will provide for the capture and storage of the configuration of the newly deployed server and orientation on product usage. To be delivered during standard office ours, standard office days.	U5683A
Provides for the Installation and Start-up of Compaq's Rapid Deployment Pack on a Customer supplied server designated as a Deployment Server. Includes the deployment of a single server. This new server will be deployed using either one of the pre-configured scripts or an image. In addition, the service will provide for the capture and storage of the configuration of the newly deployed server and orientation on product usage. To be delivered during standard office ours, standard office days. Electronic.	U5683E

NOTE: For more information, customer/resellers can contact http://www.hp.com/services/carepack

Memory

ProLiant BL10e G2 Server Blade

STANDARD MEMORY

512-MB PC2100 Registered ECC DDR DIMM Memory installed (1 x 512-MB SDRAM DIMM)

STANDARD MEMORY PLUS OPTIONAL MEMORY

Up to 1024 MB PC2100 Registered ECC DDR DIMM Memory is available with the installation of optional SDRAM DIMM memory expansion kits.

Memory		Slot	
		1	2
Standard	**512 MB**	**512 MB**	**Empty**
Optional	**640 MB**	**512 MB**	**128 MB**
Optional	**768 MB**	**512 MB**	**256 MB**
Maximum	**1024 MB**	**512 MB**	**512 MB**

Following are memory options available from HP:

- 128MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 128 MB) 287494-B21
- 256MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 256 MB) 287495-B21
- 512MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 512 MB) 287496-B21

HP ProLiant BL10e G2 Server Blade Enclosure	**Dimensions**	Height	5.25 in (13.35 cm) (3U)
		Width	17.5 in (44.45 cm)
		Depth	28.35 in (72.01 cm)
	Weight	Interconnect Tray	4.5 lb (2.04 kg)
		20 server blades	35 lb (15.86 kg)
		Enclosure with 2 power supplies	54.5 lb (24.7 kg)
		Total weight fully loaded	94 lb (41.73 kg)

Power Supply	**600W, Hot-Plug Redundant (2 standard)**	Two Redundant Power Supplies (optimized to provide full redundancy at 120 and 220 volts)	
	Input Specifications	Normal Line Voltage	100 to 127VAC, 200 to 240VAC
		Range Input Line	90 to 264VAC
		Frequency Range	43 to 63Hz
		Power Factor	> 0.95 (120Vac/Max Load)
		Input Current	8.5A @ 120VAC, 4.3A @ 240VAC
		Inrush Current	25A
		Holdup Time	25mS
	General Specifications	Full Output Rating	600W
		Minimum Load	
	Dielectric Voltage Withstand	Input to Output	1500Vac or 2150Vdc (1 Min.)
		Input to Ground	1500Vac or 2150Vdc (1 Min.)
	Input Transient Susceptibility	Common and Differential Mode (superimposed on AC line)	2200V
		Differential Mode	1100V

NOTES: ProLiant BL e-Class Power Calculator is available from the product page at the following address: http://www.Compaq.com/products/servers/proliant-bl/e-class/index.html
Click "Power Calculator" in the "Support" section.

Non-Hot Plug Ultra ATA/100 Hard Drives	**40 GB 5.4 K**	**Capacity**	40,007 MB	
		Height	0.374 in (9.5 mm)	
		Width	2.756 in (70 mm)	
		Interface	Ultra ATA-5 (IDE) 100 MB/s	
		Transfer Rate Synchronous (Maximum)	27.8 to 44.1 MB/sec (Disk-Buffer)	
		Seek Time (typical reads, including settling)	Single Track	13 ms
			Rotational Speed	5,400 RPM
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	78,140,160 (LBA)

Two NC3163 Fast Ethernet NIC Embedded 10/100 WOL (Wake on LAN)	**Network Interface**	10Base-T/100Base-TX	
	Compatibility	IEEE 802.3/802.3u compliant	
	Data Transfer Method	32-bit bus-master PCI	
	Network Transfer Rate	10Base-T (Half-Duplex)	10 Mb/s
		10Base-T (Full-Duplex)	20 Mb/s
		100Base-TX (Half-Duplex)	100 Mb/s
		100Base-TX (Full-Duplex)	200 Mb/s
	Connector	Mates into enclosure center wall assembly	
	Cable Support	10Base-T	Categories 3, 4 or 5 UTP; up to 328 ft (100 m)
		100Base-TX	Category 5 UTP; up to 328 ft (100 m)

HP ProLiant BL e-Class C-GbE Interconnect Switch	**General**	Two 24-port Managed Layer 2 Ethernet switches for server network cable reduction Fully pre-configured for immediate operation
	Performance	4.0 Gbps Switching bandwidth 12 Million pps aggregate throughput (64-byte packets) Full-wire speed for all connections
	Forwarding Mode	Store and forward
	MAC Addresses	16,382; MAC address based filtering and MAC address packet priority configuring
	Memory	64MB Main 12MB Flash 32MB Packet Buffer
	Ports	Four RJ-45 10/100/1000 T/TX/T Gigabit Ethernet uplink ports for customer use Forty 10/100 T/TX fast Ethernet downlink ports dedicated to server blade to interconnect switch network connections Two 10/100 T/TX Fast Ethernet ports dedicated to inter-switch module communications One RS-232 DB-9 port (console connector for Integrated Administrator) One 10/100 T/TX Fast Ethernet port (Network management connector for Integrated Administrator) Auto-negotiation and auto-sensing with full-duplex
	Management	Web-based interface with graphical user interface Console menu driven Interface via local RS-232 and Telnet Scriptable command line interface (CLI) SNMP v1 (RFC 1157) with scripting tool and example scripts RMON v1 (RFC 1757) groups 1, 2, 3, and 9 Telnet (RFC 854) MIB-II (RFC 1213), Bridge MIB (RFC 1493), Interface MIB (RFC 2233), 801.1Q MIB (RFC 2684), RMON1 MIB (RFC 1757) groups 1, 2, 3, and 9, Ethernet MIB (RFC1643) and HP-specific switch MIBs 64 Port-based IEEE 802.1Q tagged VLANs per switch module XML human read/write configuration file TFTP client (RFC 783) for backup and remote download of configuration and history log files IGMP (Internet Group Management Protocol) multicasting EtherChannel (Fast EtherChannel, GigaChannel) compatible trunking Uplink port speed and link activity LEDs Simple network time protocol (SNTP) Broadcast, multicast, and DA-unknown packet storm control BootP and DHCP client support BootP and DHCP client support Port mirroring
	IEEE Standards Compliance	IEEE 802.3 10Base-T Ethernet IEEE 802.3u 100Base-TX Ethernet IEEE 802.3ab 1000Base-T Ethernet IEEE 802.1D Spanning Tree Protocol IEEE 802.1p Quality of Service (QoS) Packet Prioritization

	IEEE 802.3ac and 802.1Q Port Based Tagged VLANs and VLAN Extensions IEEE 802.1Q Trunking Encapsulation IEEE 802.3x Flow Control	
Form Factor	Removable interconnect tray that plugs into the rear of the server blade enclosure	
Network Transfer Rate	10Base-T (Half-Duplex)	10 Mb/s
	10Base-T (Full-Duplex)	20 Mb/s
	100Base-TX (Half-Duplex)	100 Mb/s
	100Base-TX (Full-Duplex)	200 Mb/s
	1000Base-T (Full-Duplex)	2000 Mb/s
	1000Base-T (Full-Duplex)	2000 Mb/s
Cable Support	10Base-T	Categories 3, 4 or 5 UTP;up to 328 ft (100 m)
	100Base-TX	Category 5 UTP; up to 328 ft (100 m)
	1000Base-T	Category 5 UTP; up to 328 ft (100 m)

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